Patent claims

1. A power steering system for motor vehicles, having a rotary slide valve which has a reaction piston which delimits an active and a passive reaction chamber, it being possible to supply a boost pressure to the active reaction chamber in order to change an actuating force at the steering handle, characterized in that a damping piston (4) is connected to the active reaction chamber (2) in order to absorb dynamic oscillations of the reaction pressure.

2. The power steering system as claimed in claim 1, characterized in that the side, remote from the active reaction chamber (2), of the damping piston (4) is stressed counter to atmosphere and/or a spring (5).

3. The power steering system as claimed in claim 1 or 2, characterized in that the damping piston (4) is of damped and/or smooth running configuration.

4. The power steering system as claimed in claim 1, 2 or 3, characterized in that the damping piston (4) is configured as a complete cartridge and is tuned to reaction chamber pressure peaks.

5. The power steering system as claimed in one of claims 1 to 4, characterized in that the side, remote from the active reaction chamber (2), of the damping piston (4) is connected to the passive reaction chamber (3).

6. The power steering system as claimed in one of claims 1 to 5, characterized in that the damping piston (4) has a weak spring (5) whose spring stiffness is preferably between 0.1 and 2 N/mm.

7. The power steering system as claimed in one of claims 1 to 6, characterized in that the damping piston (4) is provided with the functions of a cutoff valve (8) or of a pressure limiting valve.

8. The power steering system as claimed in claim 7, characterized in that the damping piston (4) has restrictor bores (9, 10) and control and sealing edges (11) in accordance with the functions of a cutoff valve (8).

9. The power steering system as claimed in claim 8, characterized in that the restrictor bore (9, 10) and the control and sealing edges (11) are arranged in accordance with the low strength of the spring (5).

10. A power steering system for motor vehicles, having a rotary slide valve which has a reaction piston which delimits an active and a passive reaction chamber, it being possible to supply a boost pressure to the active reaction chamber in order to change an actuating force at the steering handle, characterized in that the reaction piston (1) has a diaphragm, which is arranged between the active reaction chamber (2) and the passive reaction chamber (3).

11. A power steering system for motor vehicles, having a rotary slide valve which has a reaction piston which delimits an active and a passive reaction chamber, it being possible to supply a boost pressure to the active reaction chamber in order to change an actuating force at the steering handle, characterized in that a centering piece (6) is arranged in the passive reaction chamber (3) and is connected to the reaction piston (1) by means of a decoupling element (7).

12. The power steering system as claimed in claim 11, characterized in that the decoupling element is configured as a decoupling spring (7).

13. The power steering system as claimed in claim 11 or 12, characterized in that the centering piece (6) is floatingly arranged in the passive reaction chamber (3).

14. A power steering system for motor vehicles, having a rotary slide valve which has a reaction piston which delimits an active and a passive reaction chamber, it being possible to supply a boost pressure to the active reaction chamber in order to change an actuating force at the steering handle, characterized in that a cutoff valve (8) or pressure limiting valve is provided with a weak spring (5), such that a piston (4a) of the cutoff valve (8) or of the pressure limiting valve reacts almost without delay to dynamic oscillations of the reaction chamber pressures.

15. The power steering system as claimed in claim 14, characterized in that restrictor bores (9, 10) and control and sealing edges (11) of the cutoff valve (8) or of the pressure limiting valve are arranged in accordance with the low strength of the spring (5).

16. The power steering system as claimed in claim 15, characterized in that the restrictor bore (9, 10) and the control and sealing edges (11) are arranged in such a way that relatively long travel, matched to the relatively low strength of the spring (5), of the piston (4a) is required in order to completely open the overpressure function.

17. The power steering system as claimed in one of claims 14, 15 or 16, characterized in that the spring (5) is prestressed counter to a first opening pressure.

18. The power steering system as claimed in one of claims 14 to 17, characterized in that the spring has a spring stiffness of 0.1 to 2 N/mm, preferably 0.4 to 0.6 N/mm.